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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

OF THE

VILLAGE OF PORT PERRY

COUNTY OF ONTARIO

1964

VILLAGE OF PORT PERRY
1964
COUNTY OF ONTARIO

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Report on water pollution survey of the village of Port Perry in the county of Ontario.

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THE

ONTARIO WATER RESOURCES

COMMISSION

Report

on

WATER POLLUTION SURVEY

of the

VILLAGE OF PORT PERRY

in the

COUNTY OF ONTARIO

Division of Sanitary Engineering

July 6, 1964

Report on

WATER POLLUTION SURVEY

of the

VILLAGE OF PORT PERRY

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WATER POLLUTION SURVEY

of the

VILLAGE OF PORT PERRY

INTRODUCTION

A water pollution survey of the Village of Port Perry was performed on July 6, 1964. Surveys of this type are made by the Division of Sanitary Engineering, Ontario Water Resources Commission, in order to locate active and potential sources of surface water pollution. Recommendations are made concerning the abatement of conditions which adversely affect water quality.

Similar surveys were made previously at Port Perry by Commission staff in 1958 and in 1962. Therefore, this recent survey was performed to review conditions revealed previously, and to ascertain if progressive action is being taken where necessary.

INTERVIEWS WITH OFFICIALS

A discussion was held on July 6, 1964, with Mr. J. F. Raines, Clerk-Treasurer. An unsuccessful attempt was made on July 6 to contact Dr. G. M. Rennie, Medical Officer of Health.

VILLAGE OF PORT PERRY

Port Perry is situated on the west shoreline of Lake Scugog near its southern extremity. According to the 1964 Municipal Directory, the population of the village is 2,353. The area of the municipality is approximately 700 acres.

LAKE SCUGOG AT PORT PERRY

Lake Scugog tends to have a marshy shoreline. Fed by these marshy areas and numerous small tributaries, the lake waters flow in a northerly direction into the Scugog River which eventually empties into Sturgeon Lake after flowing through the Town of Lindsay.

WATER USES

Municipal

Port Perry obtains its municipal water supply from ground water sources and therefore does not rely on Lake Scugog for this requirement. The lake receives untreated or inadequately treated waste flows from Port Perry and might be the receiving water for the effluent from any future sewage works there.

Industrial

Industrial water requirements at Port Perry are fulfilled by the municipal water supply in most instances.

Recreational

Extensive use is made of Lake Scugog at Port Perry for boating.

WATER SUPPLY

The water supply for the village is obtained from two drilled wells which are located south of Port Perry in the Township of Reach. Well No. 1 was developed by the village in 1948. Well No. 2 was established during 1957 with assistance from this Commission.

Problems have been encountered concerning the presence of iron and hydrogen sulphide in both water supplies, with iron bacteria in the entire water works, and sulphate reducing bacteria in the distribution system. Members of the OWRC staff have investigated these problems during the past year and have recommended measures to alleviate the objectionable conditions. Chlorination practices were initiated at Well No. 2 during 1963 for the control of iron bacteria. Chlorination facilities are not provided at Well No. 1.

Water storage is provided by a steel standpipe having a

capacity of 300,000 gallons and which was erected during 1961 on the east side of Silver Street near Queen Street.

SURFACE WATER DRAINAGE

Municipal storm sewer systems and ditches conduct run-off flows either directly to Lake Scugog or to small watercourses which empty into the lake. The principal creek is designated on the appended map as Watercourse "A", and has its source beyond the southern limit of the village. Watercourses "B" and "C" have their sources within the municipality and drain low-lying areas to Lake Scugog. Surface run-off was minimal during this survey due to dry weather conditions.

SANITARY WASTE DISPOSAL

Private sewage disposal facilities are employed in Port Perry due to the absence of municipal sewage works. Problems have been encountered with respect to malfunctioning systems due, in part, to limited land areas available for the installation of adequate tile bed systems. Reportedly, there are instances where septic tank effluent is discharged to storm sewers or surface water drainage systems.

The local municipal officials have engaged the services of a firm of consulting enigneers for the preparation of a preliminary engineering report on sewage works for the village.

INDUSTRY

The principal industrial firms located in Port Perry are listed as follows:

Name of Firm	Product
H. W. Gossard Limited	Undergarments
Ideal Dairy Products Limited	Minor production of dairy products
J. J. Gibson and Son Limited	Processing of poultry

Name of Firm	Product
Lake Scugog Lumber Company Limited	Building products
Port Perry Beverages Limited	Carbonated drinks
Port Perry Packers Limited	Processing of poultry

With respect to premises where industrial waste flows are produced, the following comments are provided:

According to information received previously, any industrial waste produced at the Ideal Dairy Products Limited plant is discharged to the municipal storm sewer on Mary Street.

A sub-surface sewage disposal system receives industrial waste flows at the J. J. Gibson and Son Limited poultry processing plant.

Wash water containing some caustic material is discharged from the Port Perry Beverages Limited plant to the marsh nearby. There was no opportunity for sampling the waste during this survey.

The liquid industrial waste produced at the Port Perry Packers Limited premises is discharged to a septic tank and thence to a waste stabilization pond. Reportedly, the waste does not overflow from this treatment facility.

PRIVATE OUTFALLS

Although private waste outfalls might exist to some extent in Port Perry, such outfalls were not revealed during this survey.

SAMPLING PROCEDURE

Samples were collected from municipal storm sewers and ditches where flows were evident during this survey. Samples were obtained also from the three watercourses which empty into Lake Scugog within the village. Appended to this report is a map showing the locations of the sampling points. The pertinent laboratory results are appended to this report in Tables I to IV, inclusive.

The atmospheric temperature prevailing during the period of sampling on July 6 was approximately 80 degrees Fahrenheit.

INTERPRETATION AND SIGNIFICANCE OF LABORATORY RESULTS

The analyses employed to determine the quality of samples were: biochemical oxygen demand (BOD), solids, and the enumeration of coliform organisms.

The BOD of sewage, industrial wastes, or polluted waters, is the oxygen required during stabilization of the decomposible organic or chemical material by aerobic biochemical action. A five-day BOD determination with incubation at 20 degrees Centigrade is reported. A high BOD is indicative of organic or chemical pollution. The BOD of a watercourse should not exceed four parts per million (ppm).

The analyses for solids include tests for total, suspended, and dissolved solids. The results are reported in ppm. The first test measures both the solids in solution and in suspension. The test for suspended solids indicates the measure of undissolved solids of organic or inorganic nature in suspension. Land erosion, sewage, and industrial wastes, are significant sources of suspended solids. The dissolved solids are a measure of those solids in solution.

The coliform count is employed to obtain an enumeration of coliform organisms. The presence of coliforms indicates pollution by human or animal excrement, or by some non-faecal forms. The number of coliforms is reported per 100 millilitres (ml) of the sample. The membrane filter technique was used in the examination of these samples. It is the opinion of this Commission that the presence of coliforms in a watercourse should not exceed 2,400 organisms per 100 ml of water.

SAMPLE RESULTS

The laboratory results of analyses and examinations performed on the samples collected are tabulated in appendices to this report as follows:

Tabel I - Outfalls from Port Perry to Lake Scugog
Table II - Samples pertinent to Watercourse "A"
Table III - Samples pertinent to Watercourse "B"
Tabel IV - Samples pertinent to Watercourse "C"

Outfalls from Port Perry to Lake Scugog

Of the municipal storm sewers and ditches which terminate on the lakeshore in Port Perry, flow was evident only at the storm sewer outfall which is located at the foot of Mary Street. The pertinent laboratory results confirm the presence of sewage flows in the samples obtained at this outfall (sampling point number TS.179.58W).

Samples Pertinent to Watercourse "A"

The laboratory results reveal that this watercourse receives untreated or inadequately treated sewage flows within the village.

A high coliform content was revealed in the flows discharging to the west bank of Watercourse "A" on the north side of Elgin Street (sampling point number TSA.179.81D West).

It is obvious that waste gains access through undisclosed outfalls to this creek in the central part of the village.

Samples Pertinent to Watercourse "B"

The presence of sewage was indicated in this watercourse at Perry Street (sampling point number TSB.179.53). Samples were not collected from this creek at the road near the lakeshore because, at this point, the creek water was approaching lake level and might be diluted by lake water.

Samples Pertinent to Watercourse "C"

A high coliform content was revealed in the sample obtained from this watercourse at sampling point TSC.179.31 which is located upstream from the marshy lakeshore.

SUMMARY

A water pollution survey of the Village of Port Perry was performed by Commission staff on July 6, 1964, to review conditions which had been investigated previously in 1958 and in 1962.

Sewage flows are discharged either to municipal storm sewers extending to Lake Scugog, or to small watercourses emptying into the lake. Apparently, the discharging of untreated or inadequately treated sewage to surface waters in Port Perry results, in many instances, from the lack of adequate space for private sewage disposal systems. It is obvious that municipal sanitary sewers are required in at least the more problematic sections of the village. The need for sewage works is apparent in order to minimize any adverse effects on the quality of the receiving water. The discharging of sewage to surface water provides nutrification thereof which can exert undesirable effects on aquatic life. In addition, sewage can impair the quality of water for normal requirements.

The local municipal officials have engaged a firm of consulting engineers to prepare a preliminary report on sewage works for the village.

RECOMMENDATION

The municipal officials at Port Perry are urged to initiate a sewage works project for the village in order to abate the local sewage disposal problems.

All of which is respectfully submitted,

District Engineer: J. K. Theil

Approved by: K. H. Sharpe, Director

/mh

TABLE I

ALL SAMPLES EXCEPT PH REPORTED IN PPM UNLESS OTHERWISE INDICATED

OUTFALLS FROM PORT PERRY TO LAKE SCUGOG

SAMPLE POINT No.	SOURCE	5-DAY BOD	SOLIDS			BACTERIOLOGICAL EXAMINATION
			TOTAL	SUSP.	DISS.	COLIFORMS/100 ML M.F.
TS.179.77D	DRAINAGE COURSE TERMINATING ON SHORE OF LAKE SCUGOG NORTH OF SCUGOG STREET.		NO FLOW			
TS.179.76D	DRAINAGE COURSE TERMINATING ON SHORE OF LAKE SCUGOG NORTH OF SAMPLING POINT TS.179.77D		NO FLOW			
TS.179.67W	MUNICIPAL STORM SEWER ON SOUTH SIDE OF CASIMIR STREET - DISCHARGING TOWARD THE LAKESHORE		NO FLOW			
TS.179.58W	MUNICIPAL STORM SEWER OUTLET ON LAKESHORE AT FOOT OF MARY STREET (PARTLY SUBMERGED - VICINITY SAMPLE)	72.0	610	88	522	106,000
TS.179.52W	MUNICIPAL STORM SEWER OUTLET ON LAKESHORE AT FOOT OF QUEEN STREET		NO FLOW			

TABLE II

ALL SAMPLES EXCEPT PH REPORTED IN PPM UNLESS OTHERWISE INDICATED

SAMPLES PERTINENT TO WATERCOURSE "A"

SAMPLE POINT NO.	SOURCE	5-DAY BOD	SOLIDS			BACTERIOLOGICAL EXAMINATION
			TOTAL	SUSP.	DISS.	COLIFORMS/100 ML M.F.
TSA.179.42	WATERCOURSE "A" AT ROAD UPSTREAM FROM MOUTH	3.0	358	14	344	48,000
TSA.179.53	WATERCOURSE "A" AT NORTH STREET	9.2	510	15	495	178,000
TSA.179.77	WATERCOURSE "A" AT LILLA STREET	--	--	--	--	44,000
TSA.179.81(E)D	DITCH TO WATERCOURSE "A" AT ELGIN STREET - EAST BANK, NORTH SIDE OF STREET		NO FLOW			
TSA.179.86(E)D	DITCH TO WATERCOURSE "A" AT ELGIN STREET - EAST BANK, SOUTH SIDE OF STREET		NO FLOW			
TSA.179.81(W)D	DITCH TO WATERCOURSE "A" AT ELGIN STREET - WEST BANK, NORTH SIDE OF STREET	--	--	--	--	150,000
TSA.179.86(W)D	DITCH TO WATERCOURSE "A" AT ELGIN STREET - WEST BANK, SOUTH SIDE OF STREET		NO FLOW			
TSA.179.89(N)D	DITCH TO WATERCOURSE "A" AT CRANDLE STREET - NORTH BANK, EAST SIDE OF STREET		NO FLOW			
TSA.179.86(W)D	DITCH TO WATERCOURSE "A" AT CRANDLE STREET - SOUTH BANK, EAST SIDE OF STREET		NO FLOW			
TSA.179.91	WATERCOURSE "A" AT CRANDLE STREET	--	--	--	--	44,000
TSA.180.05	WATERCOURSE "A" AT SCUGOG STREET	0.6	862	4	858	15,000

TABLE III

ALL SAMPLES EXCEPT PH REPORTED IN PPM UNLESS OTHERWISE INDICATED

SAMPLES PERTINENT TO WATERCOURSE "B"

SAMPLE POINT NO.	SOURCE	5-DAY BOD	SOLIDS			BACTERIOLOGICAL EXAMINATION
			TOTAL	SUSP.	DISS.	COLIFORMS/100 ML M.F.
TSB.179.53	WATERCOURSE "B" AT PERRY STREET	11.0	572	8	564	79,000
TSB.179.54W	MUNICIPAL STORM SEWER OUTFALL ON WEST BANK OF WATERCOURSE "B" - NORTH SIDE OF PAXTON STREET.	INSUFFICIENT FLOW FOR SAMPLING				
TSB.179.56	WATERCOURSE "B" SOUTH OF PAXTON STREET	NO FLOW				

TABLE IV

ALL SAMPLES EXCEPT PH REPORTED IN PPM UNLESS OTHERWISE INDICATED

SAMPLES PERTINENT TO WATERCOURSE "C"

SAMPLE POINT NO.	SOURCE	5-DAY BOD	SOLIDS			BACTERIOLOGICAL EXAMINATION
			TOTAL	SUSP.	DISS.	COLIFORMS/100 ML M.F.
TSC.179.31	WATERCOURSE "C" AT ROAD UPSTREAM FROM MOUTH	3.3	692	34	658	63,000

ROAD ALLOWANCE BETWEEN CON. VI & VII

VILLAGE LIMIT

TOWNSHIP OF REACH

CON. VI

CON. V

VILLAGE LIMIT

ROAD ALLOWANCE BETWEEN CON. VI & V

VILLAGE LIMIT

LAKE SCUGOG

SIMCOE ST. · ROSA ST. · BIGELOW ST. · BEECH · BEECH CROFT · KENT ST. · ST.

BAY ST. · BALSAM ST. · LILLA ST. · PAXTON ST. · McDONALD ST.

RENO ST. · SILVER ST. · OTTAWA ST. · QUEEN · ROSA · COLBORNE ST. · BIGELOW · ELGIN · ELLA · CALEB · CLARK · GRANDLE · SCUGOG · OTTAWA ST. · LILLA

● STANDPIPE

WATERCOURSE "C" · WATERCOURSE "B" · WATERCOURSE "A" · WATERCOURSE

PERRY ST. · NORTH · JOHN · MARY · CASMIR · SHANLY · PERRY · WATER · HIGH · CARNEGIE ST. · CEDAR

ALMA ST. · ARK ST. · CEDAR ST. · ALLAN ST. · UNION AVE. · MAY · BEXTON · MAPLE ST. · SIMCOE ST. · VICTORIA ST. · PINE ST. · MAJOR · ALMA · ONTARIO

LORNE · ARROW ST.

TSC – 179.31

TSB – 179.53

TSB – 179.54 W

TSB – 179.56

TSA – 179.42

TSA – 179.53

TS – 179.52 W

TS – 179.58 W

TSA – 179.81(W) D

TSA – 179.89(N) D

TSA – 179.77

TSA – 179.81(E) D

TS – 179.67 W

TSA – 179.86(E) D

TSA – 179.86(W) D

TSA – 179.91

TS – 179.77 D

TSA – 179.89(S) D

TS – 179.76 D

TSA – 180.05

LEGEND

TSA – 179.42 — SAMPLING POINT SHOWING STREAM AND MILEAGE

TS – 179.67 W — STREAM AND MILEAGE AT OUTFALL
— TYPE OF OUTFALL

OUTFALL SYMBOL LETTERS

W — STORM SEWER
D — DITCH

ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF PORT PERRY

WATER POLLUTION SURVEY
1964

SCALE: 200 0 500 1000 FEET

DRAWN BY: H.G. | DATE: JULY 1964

CHECKED BY: | DRAWING No: 64 — 54